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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/565,050	02/15/2006	Thomas Daniel	2982741772	5372

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MARSHALL, GERSTEIN & BORUN LLP
233 SOUTH WACKER DRIVE
6300 SEARS TOWER
CHICAGO, IL 60606-6357

EXAMINER

BOYLE, ROBERT C

ART UNIT	PAPER NUMBER
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1796

MAIL DATE	DELIVERY MODE
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11/10/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/565,050

Applicant(s)

DANIEL ET AL.

Examiner

ROBERT C. BOYLE

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 August 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10, 12 and 13 is/are pending in the application.
- 4a) Of the above claim(s) 9, 10, 12 and 13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Any rejections stated in the previous Office Action and not repeated below are withdrawn. In particular, the objection of claim 4 is withdrawn because of the amendments made. The double patenting rejection over 11/630,949 is withdrawn because Applicant's have discussed that the instantly claimed bicyclic amide acetal cannot be formed by the process described in claim 1 of 11/630,949 and must involve dimethylformamide dimethyl acetal as the starting reactant (see Remarks, filed 8/21/09, page 4).
3. No new grounds of rejection have been introduced; therefore this action is properly deemed FINAL.

Double Patenting

4. Claims 1-8 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1, 11-12 of copending Application No. 10/588,671.
5. The rejection is adequately set forth in paragraphs 11 in the office action mailed on April 30, 2009 and is incorporated here by reference.

Claim Rejections - 35 USC § 103

6. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Engelhardt** (US 6,414,214) in view of **Goel** (US 4,539,376).

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7. The rejection is adequately set forth in paragraphs 17-25 in the office action mailed on April 30, 2009 and is incorporated here by reference.

Response to Arguments

8. Applicant's arguments filed August 21, 2009 have been fully considered but they are not persuasive.

9. Applicant argues that anhydride groups are not present in the polymers of Engelhardt because the polymers are prepared from an aqueous monomer solution. This is not persuasive.

10. Engelhardt gives one polymerization example using one monomer, acrylic acid. However, Engelhardt lists a number of non-preferred monomers, including maleic anhydride and maleic acid (col. 3, ln. 45-50). A preferred embodiment is not controlling, rather, all disclosures "including unpreferred embodiments" must be considered. *In re Lamberti* 192 USPQ 278, 280 (CCPA 1976) citing *In re Mills* 176 USPQ 196 (CCPA 1972).

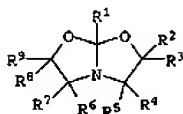
11. As maleic anhydride would hydrolyze to maleic acid, Engelhardt must have envisioned polymers of maleic anhydride in addition to polymers of maleic acid.

12. Furthermore, Engelhardt does not teach that the polymerization must occur in an aqueous solution, but rather focuses on the crosslinking performed during or after polymerization, which can occur in suitable solvents such as methanol, ethanol, i-propanol, or acetone (col. 8, ln. 15-16). Engelhardt does not teach the monomers or polymers are hydrolyzed prior to crosslinking. Therefore, Applicant's argument is not persuasive.

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13. Applicant argues that 2-oxazolidinone is in no way related to the claimed bicyclic amide acetal and has different functional groups. This is not persuasive.

14. The two compounds shown below have a number of similarities, and a few differences.



claimed amide acetal



2-oxazolidinone

15. Similarities include (1) a five member heterocyclic ring structure (2) with a “N” and “O” separated by a carbon atom which is bound to another “O” and (3) an extremely electron deficient carbon near atoms with lone pairs. Differences include (A) a bicyclic system versus a monocyclic structure, (B) a single bond between the carbon and oxygen versus a double bond. The examiner acknowledges that the compounds are different, with different functional groups, acetal amide versus carbamate. However, it is the examiner’s position that one of ordinary skill in the art would recognize the similarities present in the two compounds.

16. Applicant argues that Engelhardt teaches away from the instant invention because Engelhardt prefers a crosslinker of high reactivity. This is not persuasive.

17. While it is acknowledged that Engelhardt prefers high reactivity, this is a preference, as acknowledged by Applicant on page 10, ln. 5-6 of the Remarks filed 10/21/2009: “The ‘214 patent further specifically discloses a preference for a surface postcrosslinker of high reactivity...” As Engelhardt teaches several surface postcrosslinkers, different reactivities must be present. Therefore, this amounts to a preference for high reactivity. “The prior art’s mere disclosure of more than one alternative does not constitute a teaching away from any of these

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alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed....” *In re Fulton*, 391 F.3d 1195, 1201, 73 USPQ2d 1141, 1146 (Fed. Cir. 2004).

18. Furthermore, Engelhardt teaches of high reactivity allows for gentler temperatures (col. 9, ln. 9-12). This does not discredit or criticize low reactivity crosslinkers, but rather states a preference as it relates to temperature. Because Engelhardt does not discredit or criticize the use of low reactivity crosslinkers, Applicant’s argument is not persuasive.

19. Applicant argues that bicyclic amide acetals are less reactive crosslinkers, however, neither Engelhardt nor Goel teach that the bicyclic amide acetals are less reactive crosslinkers. Rather, Goel teaches that the reaction involving the bicyclic amide acetals is rapid and exothermic (col. 2, ln. 22-35) which implies a highly reactive crosslinker.

20. Furthermore, “high” and “low” are relative terms, and the prior art does not provide a standard for ascertaining the requisite degree. The “high” discussed in Engelhardt may be on a different scale than contemplated by the Applicant.

21. Applicant argues that the surface post crosslinking in the Engelhardt is substantially different than the crosslinking in Goel because Goel is not directed to water absorbing polymers or surface postcrosslinking. This is not persuasive.

22. It is the examiner’s position that both Goel and Engelhardt teach crosslinking of maleic anhydride polymers. While the reaction conditions may vary, such as solvents and comonomers, neither reference teaches away from the other.

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23. While Goel might not teach water absorbing polymers nor surface postcrosslinking, Goel is used as a teaching reference, and therefore, it is not necessary for this secondary reference to contain all the features of the presently claimed invention, MPEP 2145; *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973); *In re Keller* 624 F.2d 413, 208 USPQ 871, 881 (CCPA 1981). Rather this reference teaches a certain concept, and in combination with the primary reference, discloses the presently claimed invention.

24. Applicant argues that no anhydride groups are present in the surface crosslinking of water absorbing polymers. Applicant uses claim 4 of the instant application to provide support for this. This is not persuasive because instant claim 4 only shows that acrylic acid or esters are present and not that anhydrides are absent.

25. Applicant argues that there would not have been a reasonable expectation of successfully surface crosslinking water absorbing particles with the combination of Engelhardt and Goel. This is not persuasive.

26. The prior art can be modified or combined to reject claims as *prima facie* obvious as long as there is a reasonable expectation of success. MPEP 2143.02; *In re Merck & Co., Inc.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Obviousness does not require absolute predictability, however, at least some degree of predictability is required. Evidence showing there was no reasonable expectation of success may support a conclusion of nonobviousness. MPEP 2143.02; *In re Rinehart*, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976).

27. Both Engelhardt and Goel teach crosslinking polymers, of which maleic anhydride may be a monomer. Goel teaches crosslinking with a bicyclic amide acetal. Given the maleic

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anhydride polymers of Engelhardt, it would be reasonable to expect the crosslinker taught in Goel to be successful because the same maleic anhydride polymers are involved. There is no indication in either reference which indicates there would be no reasonable expectation of success. Therefore, Applicant's argument is not persuasive.

28. Applicant argues that no motivation is present to use the crosslinkers of Goel with the process of Engelhardt. This is not persuasive.

29. It would have been obvious to one of ordinary skill in the art to use the bicyclic compounds of Goel with the postcrosslinking of Engelhardt because bicyclic amide acetals provide rapid and exothermic crosslinking of acrylic polymers, such as malice anhydride copolymers, with no volatile material or foaming which can be accelerated by heating (Goel: col. 2, ln. 22-35) and more reactive crosslinkers makes it possible to terminate the reaction directly on obtaining a residual moisture content of a desired, specific amount (Engelhardt: col. 9, ln. 9-12). Therefore, Applicant's argument is not persuasive.

Conclusion

30. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT C. BOYLE whose telephone number is (571)270-7347. The examiner can normally be reached on Monday-Thursday, 9:00AM-5:00PM Eastern.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571)272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ROBERT C BOYLE/
Examiner, Art Unit 1796

/Vasu Jagannathan/
Supervisory Patent Examiner, Art Unit 1796